## Project Cannikin Completed at Amchitka Island

Project Cannikin, the underground detonation of a five-megaton Spartan missile warhead on remote Amchitka Island, was successfully completed recently.

Sandians who participated in the project included Byron Murphey, Director of A pplied Research 8300, a member of the Test Manager's Advisory Panel. Mel Merritt (9150), effects scientist for the event, supervised and coordinated efforts to insure adequate safety studies for the shot.

Ben Benjamin, supervisor of Instrumentation Fielding Division 9123, headed a group of Sandians who made measurements of ground motion on and below the surface. The group also installed passive instrumentation to measure peak pressure and acceleration in the water around the island during the detonation.

Helping in the activity were Ken Kimbell, Harry Holmes, B.C. Holt (all 9123), Jim Johnson and Jerry Chael (both 9124).

Jose Llamas (9312) and Charles Nelson (9222) made photographs and operated instrumentation aboard one of the AEC's "flying laboratories" above the site during the shot.

Freddie Shoemaker and Jerry Slusser (both 9132) helped arm and fire the device,


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## For Quartz Gauge Users

## George Ingram Develops Computer

George Ingram of Explosives Physics Division 5131 has developed a circular slide rule computer which simplifies work with the Sandia-developed quartz gauge, a piezoelectric transducer widely used throughout the United States in shock-wave research and instrumentation. The computer makes it quick and easy to solve a nonlinear expression which relates the electric current from the quartz gauge to the amplitude of the stress wave to which the gauge has been subjected.
"The computer serves two different purposes," George says. "Prior to shot time it furnishes information enabling you to dial-in the proper settings on your data-recording instruments. Secondly, when you have successfully completed your test and have the raw output - current data in hand, the computer facilitates its quick conversion into meaningful information on stress amplitude."

Invented about ten years ago in the Physics of Solids Research Department 5130 , the quartz gauge has found applications at the Nevada Test Site, at explosive testing sites, for gas gun impact studies, and in laser and electron beam facilities. It is widely used at Sandia in shock-wave research.


PROTOTYPE of a circular slide rule computer for quartz gauge users is displayed by George Ingram (5131). The production model will be much smaller and available shortly.

George, a technical staff associate, has worked in Department 5130 since he joined Sandia 14 years ago. He is an electronics graduate of Oklahoma State University's Technical Institute.

## SPIRAL: An Approach to the Needle in the Haystack



LESLIE WEST (5424) stands with the tools of SPIRAL - a deck of cards and a computer. SPIRAL is a program developed by Leslie for the retrieval of information based upon use of key words or phrases.

A staff member in the Computer Science Department has developed a computeroriented method of locating the needle in the haystack, i.e., of finding a desired item of information out of a large body of information. He is Leslie West of Advanced Techniques Division 5424.

The development consists of a computer program titled Sandia Program for Information Retrieval and Listing (SPIRAL), essentially a set of instructions which tell a computer how to store large amounts of information, how to find it later, and how to respond to a researcher's questions. Key requirement of SPIRAL is a computer with a large memory storage capacity.

To use the system, the researcher merely specifies on a card a key word or phrase relating to his subject and feeds the card into a computer. The computer then searches its index for the word and types out a list of the books which contain it - complete with a report on how many times the word is used and on which pages.

If he wishes, the researcher may then tell the computer to print out a paragraph containing the word. And if he wishes to dig still deeper, the computer will print out
additional related paragraphs - even if they do not contain the key word.

Use of a phrase or series of words rather than a single word - allows the researcher to be more selective in his use of the system.

Once the computer has "learned" the SPIRAL program and stored its information, the rest is comparatively easy. In fact, the system has been designed especially for use by individuals who have had little or no experience with computers.

Though the process of converting material directly from the printed page to computerstorable data is expensive and timeconsuming, costs can be reduced in some instances by storing information which has been developed for other types of automatic processing, for example, the tapes used for automatic typesetting of books, the use of punched cards prepared for cataloging, indexing and summarizing library books.

SPIRAL is being considered for several applications at Sandia, including the retrieval of technical and personnel information.

Outside Sandia, it has been suggested that
(Continued on Page Two)

## Afterthoughts

Most Dangerous Intersection Award--Outstanding nominee for this issue's award goes to ... (fanfare) Wyoming and Zuni!! Cars attempting to make left turns off Wyoming onto Zuni, or vice versa, get hung up in intersection after light turns. Resultant impasse with oncoming traffic is good for about one accident per week. (Send us your nominees for future issues).

What The World Needs Now--a simple and effective carbon monoxide alarm. Closed cars, campers, trailers, even houses produce with dreary regularity the item in the paper "Family Suffocates" or "Father Finds Children Dead In Camper"--or sometimes even in the back of a station wagon. The alarm ideally would be interlocked with the source of the deadly gas, cutting off its operation-better cold than dead.

How About That--Harvey Mehlhouse, new Board Chairman for WE, was recently asked in an interview which assignment he considered particularly challenging in his 43 years of service. His reply: "Sandia, possibly. The two or three years I spent at Sandia were outstanding, working to knit together an organization of several highly skilled disciplines. I like to think I did a good job there, although I have to admit my successors took up right where I left off."

High Level Job Opening--The side show's human cannon-ball quit (maybe he was fired), and the manager complains he hasn't been able to find a substitute of equal caliber.

Bookie Operation Revealed--LAB NEWS back office is filling up nicely with paperback books (and hard covers too) following announcement we would again sponsor an Xmas Book Sale. Proceeds buy goodies for poor families on South Ten--so keep those books and records coming in. Favorite title thusfar received: "The Texas Travel Handbook."

Buck who?--A freaky sort of wingding will be held tomorrow night out at the Cutter Flying Service hangar at the Albuquerque Sun-port--oops, International Airport. The thing is Buck Bohemia, sponsored by the Friends of Art to raise money for the University Art Museum. According to the flyer--"Dance, eat, drink, be merry ...have your palm read, handwriting analysed, picture taken, body painted." Hmm--you think they could do the Cistine Chapel on her nape? Anyhow, it costs a buck (get it?) and you wear a wild outfit and we've been there before and it's, ah, fun but no place to bring your aunt from Duluth. Starts at 8 p.m.

Crusher-of-the-Month--"I find your vocabulary mean and impoverished, but totally adequate to express your thoughts." (English instructor's comment on student's essay.) - js

## Authors

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R.E. Sheldahl (5628) and L.A. Anderson (NASA Ames, Calif.), "Experiment with Two Flow-Swallowing Enthalty Probes in High-Energy Supersonic Streams," Vol. 9, No. 9, AIAA JOURNAL.
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B.L. Hulme (1722), "Piecewise Polynomial Taylor Methods for Initial Value Problems," Vol. 17, No. 5, NUMERISCHE MATHEMATIK.
G.E. Laramore (5151), "Threshold Singularities in Appearance-Potential Spectroscopy," Vol. 27. No. 16, PHYSICAL REVIEW LETTERS.

## Continued from Page One

## SPIRAL

SPIRAL could be applied to medical case histories, legal and legislative actions, patent information, social work case studies, crime investigation, insurance claim data, natural resource descriptions, and other fields involving large amounts of interrelated information.

Computer storage of very large information files would require an extremely large memory capacity and be quite expensive. However, this could be overcome in part if several interested organizations were to utilize a single very large computer on a time sharing basis.

## 困LAB NEWS

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Bill Laskar is the Photographer.
In Livermore, Matt Connors \& Lorena Schneider are Writers, while
George Hosoda is the Photographer.


ABOUT 450 Boy and Girl Scouts from Amarillo, Texas toured the Base recently as part of work on atomic energy merit badges. In addition to the Atomic Museum, the scouts toured Sandia's Reactor Area V. The next day the group visited Los Alamos.

## LIVERMORE NEWS

VOL. 23, NO. 23
LIVERMORE LABORATORIES
NOVEMBER 19, 1971

> "JOIN THE HOLIDAY FUN at the Sandia Christmas Dance!" says Judy Wackerly (8322). This year's party is being held Dec. 3 at the Blue Dolphin in San Leandro.


Standards Lab Managers Visit Here
One can be "right on" these days by "doing your own thing." But a group of people meeting at Sandia Laboratories Livermore used a different approach! They're "right on" by being exact and consistent.

Visiting the Laboratories recently were Standards representatives from the National Bureau of Standards, the AEC and integrated contractors of AEC/Albuquerque Operations. As a result of the meeting - and others held periodically at other AEC/ALO facilities - Sandia Laboratories expects to continue recommendations to AEC on the development and improvement of measurement systems.

During the two-day session, participants gave eight technical presentations and toured some of the Laboratories' facilities.
"And we also discussed - and in most cases resolved - a number of measurement problems," said Jack Wilson, supervisor of Standards and Calibration Section 8411-1 and host for the meeting. "These related to radiation standard samples for calibrating health physics instruments, temperature and humidity control systems for standards laboratories, correcting minor deflections in reference surface plates and developing a standard to measure very low humidity precisely."


SANDIA'S Jack Wilson (8411) and Clarence Sandy (7453) exchange views in Metrology Lab during recent meeting of Standards Laboratory Managers. The National Bureau of Standards, the AEC, and AEC/ALO integrated contractors also sent representatives to the meeting.

Sandia Laboratories Albuquerque (Department 7450) is the Primary Standards Laboratory for 14 laboratories in the AEC/ALO production system. Each year this organization certifies over 3000 reference standards (e.g., standard gas leaks, gage blocks) and instruments (e.g., flowmeters, vacuum gages) for these production centers. The group also performs technical audits and participates in contractor surveys.

## Annual Christmas Dinner/Dance Dec. 3

Only 14 days are left until our big holiday bash - the annual Sandia/Livermore Christmas dance on Dec. 3.

This year the affair will be held at the Blue Dolphin on-the-marina in San Leandro, with music by the incomparable Tony Cervone's group. It's a great bargain at $\$ 7.50 /$ person. The action starts at 6:30 (refreshments) and the sumptuous buffet dinner starts at 8 . Then dancing from 9 p.m. to $1 \mathrm{a} . \mathrm{m}$. All this plus many, many great door prizes.

The size of the Tarpon Room limits the number of tickets available - so get 'em while they last from: Carolyn Kersey, Bldg. 911 Lobby: Nancy Hunt, Bldg. 912, Rm. 242; Linda Will, Bldg. 912, Rm. 122; Mike Ferrario, Bldg. $912, \mathrm{Rm} .228$; Helen Bond, Bldg. 913, Tag Area; Marge Mederios, Bldg. 916, Rm. 128; Sharon Heckler, Mobile Office No. 5; Ginger Common, Bldg. 973, Area 8; and Barbara Carter. Mobile Office No. 3. Employee Benefits.

## Take Note

Jimmie Bauman of Data processing Division 8411 was named "Technician of the Month" recently by the American Society of Certified Engineering Technicians (ASCET), He has been with Sandia/Livermore for over 11 years, the past four years as lead technician in the Test Department's data recovery and computer area. Jimmie served as the first president of the Eastbay Chapter of ASCET and then two terms as secretary/treasurer. He is currently chairman of the Constitution and By-Laws Committee of the California State Chapter and a delegate from the Livermore Section to the San Francisco Bay Area Engineering Council.

Mel LaGasca (8411) is chairman for American Indian Culture Night presented by the Concerned Minority Citizens Nov. 19 at 7:30 p.m. at First Presbyterian Church in Livermore. The program will feature Prof. Adam Nordwall of California State College in Hayward, a panel discussion, artifacts, and ethnic library, food, and music. Donation is $\$ 2$ per person (students $\$ 1$ ). New and used clothing, toys, and canned goods will be accepted for needy Indians on reservations.

## Congratulations

Mr. and Mrs. Lutz Dahlke (8137) at son. Robert Michael, Oct. 27.

Mr. and Mrs. Leon Seibel (8175), a daughter, Cindy Kae, Oct. 9 .

## Sympathy

To Sherry Bowen (8153) for the death of her father in Livermore, Nov. I.

## Credit Union Reporter

By Bill Bristol<br>Credit Union Manager

## Albuquerque Consumer Federation Is Formed

The Credit Union has received a copy of the first issue of "The Consumer Advocate," the monthly newsletter of the newly formed Albuquerque Consumer Federation (ACF).

The 140 -member Federation describes its activities as falling in three areas information, action, and legislation - with member panels for each area. Aim of the information panel is to develop and publish knowledge concerning goods and services in the city. The action panel has the task of initiating changes in business practices, while the legislative panel will examine remedies to consumer problems that can only be brought about through legislative action.

President of the Federation is Lee Brown. a professor of economics at UNM.

The newsletter discusses a number of ongoing projects ACF has undertaken, including the following:

- to investigate and publish inconsistencies in sales tax breakoff points in Albuquerque, i.e., some stores charge more tax for a given purchase than others. (Ed. Note - Glen Kuswa, 5243. heads the panel looking into this.)
- to compile price list comparisons for common drug store items such as tooth paste, shampoo, disposable diapers, etc.
- to monitor observance of the Truth in Lending Act.
- to investigate eyeglass pricing in the city.
- to "check for heavy thumbs in the meat business."
- to join in a suit against a truck dealer where the axle on a new one-ton truck folded under a load weighing less than the truck's ratep capacity.
- to urge major food chains in the city to follow the lead of Foodway in adoption of unit pricing (giving price per ounce, pint. etc. as well as cost of item).
The legislative panel of the Federation is considering recommendations it will propose to legislators at their next session in January. This short ( 30 days) session is restricted to consideration of fiscal matters and, for this reason, ACF's primary recommendation will be to urge legislators to increase the funding of the State's Consumer Protection Division. The present staff of three for this Division is inadequate for the job. Mrs. Charmaine Crown, head of the Consumer Protection Division, outlined to the Federation her legislative concerns. Among these are enactment of building codes for mobile homes, licensing of mechanics, and the passage of no-fault automobile insurance.

Finally, the newsletter of the Albuquerque Consumer Federation urges consumers in the

city and throughout the state to join up and notes that the Federation's influence in consumer affairs is directly proportional to the length of its membership roster. If interested, send your name, address, and phone number to Albuquerque Consumer Federation, Box 5219, Sandia Base, N.M. 87115. Include any special consumer interests you may have. Suggested dues are five dollars, but ACF states that "it is more interested in your active participation than your money so send what you can." Application forms are also available in the LAB NEWS office, Bldg. 802, Rm. 100.

We are pleased to report that among the early organizational joiners of Albuquerque Consumer Federation is the Sandia Lab Credit Union.

Basketball Tickets - The Credit Union has been successful in obtaining six season tickets for the '71-72 Lobo basketball season. First game will be against California's Whittier College, Dec. 1, and the second against New Mexico State on Dec. 4. Winners will be chosen by lottery several days in advance.

## Promotions

M. Dewey Botton (9335) to Lab Assistant

William C. Burd (7624) to Laboratory Staff Associate

Bartolo Castillo (4515) to Janitor
Elton L. Chandler (5411) to Computer Facilities Clerk

Carl W. Childers (8139) to Technical Stalf Associate Raymond S. Clark (5245) to Technical Staff Associate

Richard M. Curlee (5313) to Technical Staff Associate

Darline Dulour (3148) to Mail Clerk
Annette M. Freitas (8212) to Personnel Clerk
Juan Garcia, Jr. (7542) to Photo Printer
Martin H. Gonzales (5163) to Staff Assistant Technical

Harold W. Gough (7153) to Technician
James E, Lohkamp (1935) to Technical Staff Associate

Billie L. Palmer (7122) to Technician
Ramona L. Plummer (4623) to Record Clerk
Danny H. Rhoden (3148) to Mail Clerk
Robert S. Silva, Jr. (7153) to Technician
William J. Smith (4518) to Serviceman
Beuy M. Sterling $(71+1)$ to Service Clerk
Frank V. Thome (5221) to Technical Stalf Associate Richard E. Thompson (7624) to Laboratory Stall Associate

Melvin A. La (iasca (8121) to Stalf Assistant Technical

## Recreation Notes

## FUN \& GAMES

A physical conditioning class for men will start Monday, Nov. 29 at 5:15 p.m. at the Stoneburner Field House (Texas and "F" Street). One-hour exercise periods will be held each Monday, Wednesday and Friday for 11 weeks. Testing to determine the physical condition of participants will be given at the beginning and end of the course. Contact Employee Services Division, ext. 2757, to sign up for course.

A two-day National Rally Race held in Las Cruces, N.M., Nov. 6 and 7, resulted in a first place win for Earl Gruer (4542) and Ron Ewing (5235), and a second for Phil Class (1543) and Lyle Gerdes (1542). The race was sponsored by the Sports Car Club of America and had nationwide participation.

Pat Anderson (9425) received the club championship trophy at the annual awards banquet of the Sandia Women's Golf Association on Oct. 21. Betty Chappell (AEC) was presented the president's trophy and Rose Hainlen (4152) earned the putting trophy. Special awards were also given to Betty Chappell, Merlinda Salas (AEC) and Alma Mischke (4152) for their participation in all the major 9 -hole tournaments.

New officers for the 1972 season are: Molly Ellis (5643), president: Alice Smith (3141), vice president; Dolores Streater (4140), treasurer; and Jo Sena (10), secretary.

The New Mexico Zoological Society will host a dinner on Nov. 24 to mark the beginning of a fund raising effort for the acquisition of a pair of white rhinoceroses. The dinner will be held at the Hilton Inn, 1901 University Blvd. NE, at 6:30 p.m. and cost is $\$ 7.50$ per person. Call the Rio Grande Zoo Office, 842-7822 or Mrs. Eugene Peirce, Jr., 268-0370, president of the Society, for reservations. Further information may be obtained from Mina Carnicom (5628), Society treasurer, 282-3421.
-Norma

## Congratulations

Mr. and Mrs. George Williams (5413), a daughter, Michele Lorraine, Oct. 28.

Mr. and Mrs. David Larson (DSP at Purdue Univ.), a son, Oct. I.

Mr. and Mrs. Robert Reese (DSP at Lehigh Univ.), a daughter, recently.

Mr. and Mrs. Dave Sample (9461), a daughter, Shelly Dawn, Oct. 26.

## Sympathy

To Cliff Witten (5133) on the death of his father, Oct. 25.

To Chet Fornero (4137) on the death of his father in El Paso, Oct. 29.

Who Says Surveys Don't Count?
A little while ago LAB NEWS conducted a readership survey, and one of the questions asked was how readers felt about including service award pictures in the paper. This feature had earlier been dropped. Well, lots of readers said they wanted to see LAB NEWS resume the running of pictures of people on their service anniversaries. OK, here's our first service award supplement.

Mileposts will be published with LAB NEWS probably about every third or fourth issue. We hope you like it.

# MILEPOSTS 

## LAB NEWS NOVEMBER 1971





George Mancuso - 7132


Elfides Salazar - 4331
20









# When You're Cold \& Wet \& MiserableYou May Be In Deep Trouble 

This time of year many Sandians take to the hills after deer, bear and other game. These are light hearted expeditions, usually lots of fun whether the hunter is successful or not.

But this time of year - late autumn - is characterized by quickly-changing weather in which the sunny skies and warm temperatures you enjoy when you set out in the morning may be succeeded later in the same day by storm conditions. If moisture accompanies the storm, chances are you'll be rained upon or will encounter sleet or wet snow. And the blue jeans and red sweat shirt that seemed adequate earlier in the day may become the agent of serious difficulties for you.
"The victim was suffering (or died) from exposure. . ." is a not uncommon description applied to persons lost in bad weather, but few people have any real comprehension of what "exposure" means. A medical doctor uses a more precise term to denote the same condition - "hypothermia" - the rapid, progressive mental and physical collapse accompanying the chilling of the inner core of the human body. Hypothermia is caused by exposure to cold and is aggravated by wet, wind, and exhaustion. Oddly enough, most hypothermia cases develop in air temperatures between 30 and 50 degrees. Most outdoorsmen simply can't believe such temperatures can be dangerous and they may fatally underestimate the danger of being wet at these temperatures.

Our hunter in his sopping wet jeans and sweat shirt rather quickly appreciates how unbearably cold 50 -degree water can be. His wet clothing is a highly efficient conductor of body heat and the slightest breeze enhances the loss. He's painfully cold and if he isn't close to camp he d better do something right away.

The experts say that if you cannot stay dry and warm under existing conditions, using the clothes you have with you, you must then get out of the wind and rain and make some sort of camp while you still have a reserve of energy. You'll need that energy to get a fire started under adyerse conditions and to contrive a shelter using branches or whatever else is at hand. It may be necessary to spend the night in this shelter if the storm continues, but better to be merely uncomfortable and hungry than the alternative. Try to get your clothing dried out so that it will afford you some protection when you can start moving again. Remember - wet clothing aggravates loss of body heat.

The grim facts related above were lifted from a pamphlet on the subject of hypothermia. l'd like to add a few observations derived from experience on top of cold mountains under extreme conditions. Ski patrolling (the occasion of my being on top of the cold mountain to begin with) among other things means that you remain on the mountain when the weather drives all sane skiers to better heated pursuits. Here are a few ways to survive when the temperature is
about zero, there's a penetrating wind, it's snowing and you're beginning to wonder if you're on the right planet:
-the layer principle of maintaining body heat is sound, i.e., many thin layers of clothing are much more effective than a few thick layers.
-loose clothing is better than tight clothing.
-try hardest to keep your body warm and your feet and hands are less likely to become cold.
-when the temperature drops, be sure to cover as much of your head and neck as possible. The extensive blood vessel system in the head radiates considerable body heat.
-sweaters and knitted garments are virtually useless in any kind of wind unless protected by one or more wind breakers.
-loosen boots to insure good circulation.
-mittens are better than gloves.
-overdress when preparing for a mountain trip. You can always cool off by shedding or opening a jacket but there's no way to stay warm with inadequate clothing.

- js


Sam Swysgood


Robert Goldsworthy
Robert Goldsworthy, a staff assistant in Quality Operations Western Division 1832, died Nov. 1 after a long illness. He was 49.

He had worked at Sandia Laboratories since March 1953.

Survivors include his widow and three children.

Sam Swysgood, a staff assistant in Division 1514, died suddenly Nov. 2. He was 52.

He had worked at Sandia since October 1956.

Survivors include his widow, a daughter and stepson.

## Sandian Presents Paper in USSR



Alan Toepfer, a physicist in Plasma Theory Division 5241, was in Kiev, USSR, last month for a weeklong conference on plasma theory. Alan was invited to submit a paper - "Finite-Temperature Relativistic Electron Beam Equilibria - and to attend the international conference sponsored by the Scientific Council on Plasma Physics of the Academy of Sciences of the USSR.
"It was an excellent conference," Alan says, "with several hundred scientists in attendance. About three-fourths of the delegates were from the Soviet Union and the balance from throughout the world. Twelve of the 16 people invited from the United States were present. The sessions were well managed, with simultaneous translations from Russian to English and vice versa, and the quality of the papers presented was very high.
"In addition to the conference's obvious benefits, I very much enjoyed talking to other particpants. All of our conversations were friendly and not necessarily technical. They like to talk to Westerners although they were somewhat cautious - no political discussions. One of the most common questions asked was 'Do you own a car?' This is understandable because a car in Russia costs about the equivalent of $\$ 9000$,
"It was difficult for the Russian scientists to socialize outside of the conference," Alan continues. "They were housed in one hotel and the rest of us in another. Separate buses were used to transport us to the conference sessions. The one social event, ending the conference,
was a delightful banquet, with numerous courses, lots of toasts, music and dancing."

Alan's travel arrangements inside the USSR were handled by "Intourist," the official Soviet tourist agency.
"The food was excellent and inexpensive. Each evening I had a fine dinner for about \$2.25; however, it took about three hours for dinner. Service is very slow and lots of time elapses between courses. Food was similar to that I had eaten in other parts of Europe, except beverages served with the meal were vodka, bottled mineral water and a drink similar to cream soda.
"I was free to walk around the city, but felt a little uncomfortable carrying a camera. Although we were told we could take pictures, there were many restrictions: no cameras permitted at the airport, no pictures of old buildings, of anything with a military connotation, or of the women street laborers. One of the guests started to take a picture from the hotel window of a building across the street and was told by the floor attendant not to do so. About the only subjects left to photograph were monuments and some buildings. A policeman stands on every street corner and has the authority to decide if an action is unlawful, to assess and collect a fine, and to confiscate your camera, and there is no recourse to any higher authority.
"In general, I found the people to be friendly and curious but also rather guarded in their relations with Westerners."

Alan has been with Sandia for three years. He earned a BS from Marquethe University in 1962 and his MS and PhD from the University of Southern California in 1964 and 1968 - all in physics, In 1964-65 he was a research assistant at the Royal Institute of Technology in Stockholm. nt


GENERAL Dave Burchinal (3rd from left), Deputy Commander in Chief of the US European Command visited Sandia last week for briefings. And a man with a beard claiming to be Don Cotter, Deputy Director of ARPA and a former Sandian, was with him. Andy Lieber (1750) and Bill Myre (1210) complete the foursome.

## Retiring



ANTHONY PARISI (9484)

FRANK CORNER (4154)



LAVERN DUMOND (4511)

## Speakers

E.A. Salazar (5511), "Thermal Aging of Poly (Imide) Films," Polymer Prints and American Chemical Society Meeting, Sept. 13-17, Washington, D.C.
A. Goodman (1224), "Look Out, the Computers are Coming," National Science Teachers Association, Oct. 21, Albuquerque.
J. Danclovic (3131), "Management and Organization Theory," Sandia Civitans, Oct. 27, Albuquerque.
R.H. Yoshimura (9461), "Development of a Preliminary Neutron Radiographic Facility at the Annular Core Pulse Reactor (ACPR)," American Nuclear Society Winter Meeting, Oct. 19. Miami Beach, Fla.
C.H. Seager, D. Emin and R.K. Quinn (all 5134), "Electronic Transport Measurements in the ASTEI Chalcogenide Glasses," University of California, Oct. 29, Riverside.
O.J. Burchett (9462), "Analysis Techniques for the Inspection of Carbon Composite Structures by Holographic Interferometry," Fall Conference of the American Society for Nondestructive Testing, Oct. 21, Detroit: and "The Effect of Specimen Geometry and Lateral Constraint on the Isothermal Compressibility of Low-Strength Polymeric Materials," 1971 SESA Fall Meeting, Oct. 19-22, Milwaukee.

## Take Note

The annual New Mexico Accounting and Financial Management Seminar is being held today at the Ramada Inn East. James Coleman (4153) is conference committee chairman and Fred Mitchell (also 4153) is a committee member. These two Sandians have served on the planning committee for the past seven conferences. They are both members of the National Association of Accountants, one of the co-sponsors of the seminar. Other cosponsors include the Data Processing Management Association, the University of Albuquerque and the University of New Mexico.

Bill Gaines (3311), was recently elected chairman of the Edgewood Town Council. His term in office will be one year.

The Norris Bradbury Museum at Los Alamos Scientific Laboratory is now open on weekends from 1 to 5 p.m. Weekday hours are 8 a.m. to 5 p.m. If you are visiting Los Alamos, this is an interesting way to spend some time.

Larry Lee (5133) will discuss "Propagation of Stress Waves in Porous Carbon and Graphite Composites" at a meeting of the 5100 Staff Seminar Nov. 23. On Nov. 30 Bill Brya (5152) will present "Light Scattering from Spin Fluctuations in Magnetic Systems."

The seminar meets on Tuesdays at 8:30 a.m. in rm. 201 of bldg. 806.

The bldg. 805 Branch Library has been moved. New location of the research collection is rm. 271 of bldg. 806.


PAUL WELKER (7112)


EL TRIO LOS TECOLOTES (। to r) Ben Jojola (4337), Herman Marquez (4614) and Diego Gonzales (4518) have recorded and marketed their first record - "La Que Sea" and the flip side "Arretirate a Los Campos."

# Labs Engineer Heads Ski Patrol Ski Swap; Sale Start Tomorrow 

George Kinoshita is a soft-spoken electrical engineer in org. 1226 who leads a double life. Because when he's not electrical engineering, he metamorphoses into a genuine, certified Ski Equipment Tycoon who can produce for the anxious skier, or would-be skier, just the pair of skis, boots, poles, and bindings the skier has been panting after. Cheap too. (Skiers are perhaps the most equipment-conscious faddists this side of Transylvania.)

George heads up the Sandia Peak Ski Patrol's 5th annual Ski Swap, which takes place this weekend at the Flower and Industrial Buildings on the State Fair Grounds. Skiers take surplus gear to the Swap Friday (today) to be sold on consignment ( 10 percent commission) and make purchases on Saturday between 8 and 6. "This year we're limiting sales to one day only - Saturday," George notes. "On Sunday the people can come in between $I$ and 6 to pick up their
checks or any unsold equipment."
George recalls that last year more than 4000 items were on sale at the Swap. "And we'll probably have even more stuff this year, including lots of clothing."

Proceeds from the Ski Swap are used by the all-volunteer Ski Patrol to cover costs of rescue toboggans and other medical supplies used to minister to the injured skier.

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## MISCELLANEOUS

WESTERN STYLE gold nylon den furniture: couch, 2 armchairs, coffee table, $\$ 85$ cash. Martinez, 268-6297.
MINIATURE POODLE PUPPIES, light colors, 7 wks. old, $\$ 25$. Coalson, 298-0061.
CRIB w/mattress, "Nod-A-Way," drop sides, 4 -position spring, walnut finish, \$19. Mclntire, 298 6145.

ELECTRIC JIG SAW, $\$ 5$; radial arm saw w/accessories, \$110; Danish modern couch, $\$ 20$; Redfield 4 X scope, \$35. Klett, 298-7892.
SKI OUTFIT: ladies size 10 , orange pants, matching hand-made sweater, orange \& blue reversible parka, Wright, 296-7670.
$3^{\prime} \times 5^{\prime}$ Mirror, beveled edge, $\$ 30 ; 3$ stack stools, $\$ 8$; hassock, \$4; 2 white formica coffee tables, $\$ 20$; orange table lamp, \$8. Ramsay, 298-7784.
CAMERA, Aires 35 -IIIL, F1.9, needs cleaning \& adjusting, $\$ 10$; exposure meter GE PR-3, \$5. Church, 282-3853.
$750 / 775 \times 14$ studded snow tires used less than 2000 miles, $\$ 26 / \mathrm{pr}$. Miller, 255-1324.
HIGH STANDARD Sport King 22 auto. w/holster; easy roll hand push lown mower w/grass catcher; projector screen. Shinn, 299-6238.
MINIBIKE; stereo; furniture; ping pong table; suitcases; bowling ball; workshop vacuum cleaner; ladies razor, hair dryer; elec. curlers; make-up mirror. Chandler, 296-3323.
COMPETITION HEAD for MKI Sprite, new valves, guides, CC's, polished, ported, etc., also $11 / 2^{\prime \prime}$ su carburetor set. LaBarre, 299. 3569.

FREE: 2-1/2 year old German Shepards, very friendly. Hawk, 265 . 2228.

GERBILS, 75q each. Mills, 299-2130.
NAVAJO RUG, $5^{\prime} \times 7^{\prime}$ Crystal, intricate design, make offer; DeWalt $9^{\prime \prime}$ radial arm saw, $\$ 75$; baby crib, \$75. Scheer, 265-1983
250 CC WARD's motorcycle, low mileage, $\$ 200$. Prevender, 295. 5253.

ERMA 22 cal. Luger pistol, extra clip. $\$ 50$; percussion revolver, 36 cal . Navy, engraved cylinder, \$45, want 410 or 20 ga. Zaluga, 344 . 1564.

ASTHMATICS DeVilbiss nebulizer, $\$ 35$; heavy duty hitch \& helper springs for Maverick, \$15. Stephenson, 299-3914.
GARRARD Lab 80 auto. turntable w/Shure M91E cartridge, LTIIOB tuner, Scott LK72B amplifier, \& 2 ElectroeVoice EV-4 speakers, all for $\$ 325$. Spencer, $268-6168$ after 5:30.
FREYRIE TRIMETAL SKIS, 210 cm w/ Aspen auto. bindings \& safety straps, $53^{\prime \prime}$ tapered alum. poles, \$90. Maurin, 344-4946.
$3 / 4$ TON CARGO TRAILER, 2 -wheel, fully enclosed, $\$ 250$. O'Neill, 255 . 6355.

ADDING MACHINE, 10 -col., manval, $\$ 35$ or trade for small pistol. Pritchard, 268-9618.
LIVING ROOM sofa \& chair, matching set, $\$ 50$. Metzger, 242-1028. AQUARIUM: hand made, approx. 8 . gal., filter, pump, heater, lights, cover, ornaments, etc. Faychak, 256-9764.
HO-car track set, lots of cars \& track, 2 transformers; 110 lb . barbell set. Saxton, 299-8547 after 5.
GIRL'S 3 -spd. bicycle, $\$ 30$. Netz, 282-3607.
TWO $7^{\prime} \times 8$ ' wood pivot type garage doors w/hordware, $\$ 25$ ea. Minnear, 344-5419.
BUTANE BOTTLE, 5 -gal. horizontal type w/regulator, just filled, \$25. Hole, 255-1444
AKC REG. Toy Poodles, apricot, 8 wks. old, 4 to choose from, 2 very small. McCarty, 298-2919.
BOY's bicycle, sting ray $20^{\prime \prime}$. Kelly, 255-7226.
TABLE LAMP w/shade, antique gold color, \$7. Laramore, 299-6941.
houseboat, furnished, Conchas Lake, $54^{\prime} \times 16^{\prime}$, butane $\&$ elec. lighting units, self-contained, priced quick sale. Foster, 298. 9193.

B-FLAT student clarinet, Evette (Buffet) w/case, \$90. Schuster, 2555970.

CARPETING, avocado scroll pile, approx. 50 yds., 2 rooms, hall, 3 yrs. old, $\$ 3$ yard or offer. Stark, 296-4971.
APT. SIZE DINETTE TABLE, $24^{\prime \prime} \times 20^{\prime \prime}$ folded, opens to $36^{\prime \prime}$ long, walnut color plastic top, $\$ 10$. Rowe, 296. 6295.

ACCORDION, Morsony Acrosonic, full keyboard, $\$ 125$. Gravning, 265-1398.
PINBALL MACHINE, crossroads model, \$40. Shipley, 298-2433.
MUD \& SNOW TIRES \& WHEELS, nearly new, size $8: 55 \times 14, \$ 40 /$ pr. Barth, 345-0172.
MOBILE HOME, $12 \times 65$, in Four Hills

Mobile Home Park - adult area, ' 50 CHEVROLET, 4 -dr., 2 new tires, built-ins, 2 -bdrs., $1 \frac{13}{4}$ bath, $A C, 2$ spares, $\$ 85$. Benjamin, 842 skirting, $\$ 500$ \& assume loan. 5760 ,
Capes, 299-5883, 388 Coyote ' 60 DODGE V8 $1 / 2$-ton pickup, SWB, tane SE.
LADY KENMORE dishwasher, port., coppertone, $\$ 35$. Stanley, 296. 7623.

SEAR'S mini-bike, $\$ 85$; safety helmet, $\$ 10$; size 8 bowling shoes, $\$ 2$;
$12 \mathrm{-lb}$. bowling ball, $\$ 5$. Demmel, 299-5639.
MOTORCYCLE windshield, \$6; meter sockets, $\$ 2$ eo. Bentz, 299-3448.
NEW $4^{1 / 22^{\prime \prime}}$ by $6^{\prime \prime}$ chrome mirrors, \$10; tire chains, fit 8:00×14 or 7:10x15, \$10. Nogales, 247-1178. VEGETABLE JUICER - auto pulp ejection, Miracle model 15 , cost $\$ 70$, sell for $\$ 45$. Cooper, 299 . 6448.

BACK ISSUES NY TIMES, 1946-51, bound volumes, $\$ 5$ ea. Copeland, 344-1133.
GUITAR, Pimentel classical, ebony fretboard, rosewood box, ivory keys, cost $\$ 750 \mathrm{w} / \mathrm{o}$ case, asking $\$ 420$ w/case. Chernoff, 1109 In . diana $\operatorname{NE}$, 265-0394.
FIREPLACE SCREEN w/tender, unused, satin brass w/traversing mesh screen, $241 / 4^{\prime \prime}$ high, $36^{\prime \prime}$ wide, $w / 1 / 4^{\prime \prime}$ adiustments. Caffey, 296-3320.
BASSETT CRIB, dbl. drop sides, extra firm mattress, $\$ 35$; baby swing, $\$ 5$; walker, $\$ 2$; Penney's stroller w/canopy, \$12. Anastasio, 299-7012.

## BEDROOM SUITE: dbl. bed, dresser

 w/attached round mirror, bedside table, \$75. Stark, 8212 Pickard Ct. NE, 299-5953.LHASA APSO puppies, small Tibetan dogs, AKC reg., championship background. White, 299-6411. TWO $8: 45 \times 15$ mud \& snow recaps, \$15. Groll, 898-0641.

## CARS \& TRUCKS

63 FAIRLANE WAGON, 35,000 on motor, sans left front fender. Rose, 298-4849.
' 62 CORVAIR MOnza, 2 -dr.. AT. radio, $\$ 250$. Young, 4614 Burton SE, 256.9158.
66 FORD FAIRLANE 4-dr., R\&H, AT $\$ 650$. Pierce, 268-6251.
' 69 DODGE 108A van camper, V8, PS, AT, AC, R\&H, Red-l-Kamp equipped, new tires, low mileage. Howard, 700 California SE, 256 2525.
' 69 TOYOTA Corona, MK 2, 4-dr., AT, AC, radio, console, $\$ 1400$. Hayes, 299-5832.
'61 OLDS Cutlass, 2-dr., R\&H, AT, PS, 47,000 miles, $\$ 500$, Bahlman, 344-2498.
54 PLYMOUTH 4.dr., R\&H, new tires 8 brakes, $\$ 225$. Smelich, 242.0431.

R\&H, trailer hitch, West Coast mirrors, Alum, camper shell, $\$ 550$. Gillespie, 299-5232.
71 VW super bug. radio, ski racks, white interior, $\$ 1995$ cash only. West, 298-6966.
62 PLYMOUTH Valiant, $\$ 250$ or best offer. McClure, 265-6084
71 VOLKSWAGEN sedan, 2300 miles, extras, trade for late model pickup truck, give or take difference. Smitha, 299-1096.
63 VOLKSWAGEN CAMPER w/lg. engine \& new tent Young, 255 8193.
'64 INTERNATIONAL $1 / 2$-ton pickup truck, recent motor overhaul, $\$ 400$. Beeson, 255-3249.
65 VW squareback, $\$ 750$. Johnson. 255-5427.
67 DODGE VAN, rebuilt motor. Abeyta, 869-2524 affer 5:30,
' 68 OLDS Cutlass, 6-cyl., AT. Lambers, 296-4221.
69 CAMARO $2-284$-spd., 302 cu . in., 24,000 miles, new 7:50-14 fires $w /$ deep U.S. mags, red $w /$ white vinyl top \& white stripes, $\$ 2250$ or best offer. Cummings, 296 4348 or after 6, 344-5814.
'56 CHEV. 4-dr. sedan, needs shocks \& short block, \$125. Baldwin 256-3797.
'63 CORVAIR 4-dr., sedan, radio, stick shift, \$150. Treadwell, 296 . 4626.

63 PORSCHE coupe, Michelin tires, Boursch exhaust. Tarbell, 255 . 2940 after 4.
61 RAMBLER station wgn., auto. air not working, \$225. Nogle, 299-3863.

64 PLYMOUTH 4-dr. V8, std. trans., AC, 56,000 miles, $\$ 325$. Johnson, 255-2846 after 5:30.
61 T-BIRD convert., $\$ 300, \mathrm{~PB}$, heater, power windows. AT, needs work. Johnson, 298-2592.

## real estate

3-BDR., DEN, $1^{3 / 4}$ baths, Ig. screened porch, fp, VA or FHA. Colquitt, 298-2113.
FOUR HILLS, view, landscaping, privacy, 3 -bdr., ${ }^{3 / 4}$ baths plus $1 / 2$, den, dual fireplace, \$43.500. Butler, 242-5398 or 298-2893.

LG. LOT W/HOUSE, near schools, shopping centers, post office \& bus stop. SW valley. Gonzales, 877-1527 or 268-9912 after 5:30.

## FOR RENT

FURNISHED mobile home, 1.bdr., available now till March 15. Ward, evenings 242-2045.

WORK WANTED

CARS WAXED and hand polished, inside cleaned too, reasonable. Hubbard, 299-7818.

## WANTED

NEED RIDE evenings only to 7110 Natalie NE near Lovisiana \& Montgomery. Neiswander, 294. 1312.

WESTERN SADDLE \& ladies 5 or 10 . spd. bike. Chandler, 296-3323.
1 PR. front coil springs for MGA, Chevy II Nova, 4-bolt rims. LaBarre, 299.3569.
BUY for cash, C flute \& piccolo, as is condition, will assume repairs; also want Oboe of good make, not plastic. Fisher, 266-2266.
BABYSITTING in my home, $\$ 20$ /week, 10424 San Jacinto NE. Maes, 298-2294.
TWO-WHEEL utility trailer or frame \& axel for same. Wilson, 282. 3225.

GOOD QUALITY pool table. Hart, 282-5220.
OLD PLAYER PIANO, any kind, any condition, Sander, 299-5761.
NEED a good home for yr.-old female cat who has hod shots \& been spayed. Miller, 5308 Constitution NE, 255-1838.
LEASE OR RENT 3-bdr., 2 bath house in mountains. Martin, 282 3225.

DENVER BOUND for Thanksgiving? Need passengers to share cost of flying, less than $\$ 30$. Wed. p.m. - Sun. p.m. Guy, 268-5436.

SCHEMATICS, articles \& reports on metal detectors; also old publications about any phase of treasure hunting or coinshooting. Ludwick, 255-0289.
PORTABLE generator, used, good zondition. 1500 watts will do. Roth, 877-4997
PICKUP, 1960 ' 65 V6 or V8, 4 -spd. trans. Nogle, 299-3863.
DODGE OR FORD VAN, 1967.'69. AT, V8. Davies, 265-7283.
DUKANE projector. Hendrix.299-8872.

## LOST AND FOUND

LOST - Silver Tie Bar initial K. Kaspar, 265-8228.
LOST - Pr. dk. grey RX glasses, 2 keys on clip, button down grey knit sweater, black Autopoint mech. pencil, $5^{\prime \prime} \times 3^{\prime \prime}$ Astro Turf, 8 keys \& washer screwdriver on holder, keys w/ID-Richard Carlisle on bronze tag, 25 keys including 2 security podlock type. LOST AND FOUND, tel. $264-2757$, Bldg. 832.
FOUND - Religious medal on silver
chain, English made pipe w/silver stem. LOST AND FOUND, tel. 2642757, Bldg. 832.

## Soul Session

## Vaudeville Night Tomorrow



HAPPY HOURS are running four hours long these Friday nights in November. Special prices are in effect from 5 to 10 p.m. Tonight Phil Graham and the group will be wired into the bandstand from 7 to $10 \mathrm{p} . \mathrm{m}$. for dancing. Club manager Smiling Jim Noonan's special veal cutlet buffet will be spread from 6 to 8 p.m. and Yolanda Adent and piano will take over the main lounge at 9 p.m. for a sing-along.

Next Friday, Wildman Bob Banks and the red Yamaha electronic organ will make the happy music while a new buffet - fried shrimp (and lots of it) will be tried. This one will go for $\$ 1.85$ for adults, $\$ 1.60$ for kids under 12 .

Another great buffet menu is planned for Friday, Dec. 3. This will feature the Club's famous baron of beef plus lobster newburg and chicken cacciatore - all this for $\$ 1.75$ for adults, $\$ 1.50$ for kids. The Top Hats Dixieland will play for dancing and door prizes will be given away throughout the evening.

TOMORROW NIGHT is family night at the club with a trio of teen age girls called the Sofistikits scheduled to perform on stage followed by some cartoons, a chapter of the Eagle Shadow serial and then Walt Disney's "Monkeys Go Home." The film stars Dean Jones and Maurice Chevalier, Super sandwiches and Happy Hour prices will be available about $6 \mathrm{p} . \mathrm{m}$. Admission is free to members.


NO OTHER WAY to describe a Soul Session Extravaganza except with the word "fantastic." Something gets in the air, or the blood, or the boose or something. People that you've known for years as quiet and serious suddenly get out there on the strobe-lit floor and turn into twisting, gyrating primitives. It's something else and it's great fun.

On Saturday, Nov, 27, another Soul Session Extravaganza is booked at the Club to feature the all-time favorite Rod King and the Soul Knights and Swartz (Top 3). These two groups will alternate on the bandstand and present continuous rock music from 8:30 to $12: 30$. Super sandwiches will be available and Happy Hour prices will be in effect all evening. Admission is free to members, 50 cents for guests.

ANNUAL KIDS CHRISTMAS PARTY is scheduled for Saturday morning Dec. II. Puppeteers Ron Day and Mary Kay will be there plus some other entertainers and a series of movie cartoons will be shown. Santa Claus will pass out goodies to kids 9 and under.

## Only 20 Seats Left On Club Hawaii Tour

Only 20 seats are left on the Coronado Club's travel package to Hawaii Feb. 21-28, according to Chet Fornero (4337), Club president. The Club is splitting the chartered Western Airlines jet with the Elks Club for this trip and only a total of 70 seats are available to the Coronado Club.

The package includes transportation and hotel on Oahu for three days and nights and four days and nights on Maui. Both hotels will be luxurious ones, part of the Sheraton chain.

Total cost of the trip is $\$ 349$ (based on double room occupancy). A $\$ 50$ deposit should be paid to the Club office right away with the remainder of the fee due Jan. 14 .

## Events Calendar

Nov. 19 - Los Angeles Philharmonic at Popejoy Hall, 8:15 p.m.
Nov. 19-20 - Ski Swap, Flower Bldg., State Fair Grounds
Nov. 20 - "From Bach to Bernstein," Albuquerque Symphony Orchestra Young People's Concert, 3 p.m., Popejoy Hall.
Nov. 21 - N. M. Mt. Club, Peralta Canyon hike in Jemez Mts., meet at Gulf Mart, 8 a.m.
Nov. 23 - National Players production of Moliere's great comedy "The Miser." 8:15 p.m., Popejoy Hall.
Nov. 24 - National Players, "The Taming of the Shrew," $8: 15$ p.m., Popejoy Hall.
Nov. 25 - Thanksgiving, N.M. Mt. Club, short climb up Embudo Canyon, meet at Blue Cross Bldg., 8:30 a.m.
Nov. 28 - Audubon Wildlife Film Series, "Filming in No-Mans Land," 7:30 p.m., Popejoy Hall.
Nov. 29 - UNM Speakers Program, William Kuntsler, attorney for "Chicaga 7," civil libertarian, Popejoy Hall.
Dec. 2 UNM Speakers Program, Donald Zagoria, expert in Sino-Soviet affairs, author. Topic to deal with President Nixon's visit to the People's Republic of China. Popejoy Hall.


